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CORRELATION OF N-TERMINAL PRO B-TYPE NATRIURETIC PEPTIDE AND SPECKLE TRACKING DERIVED LONGITUDINAL STRAIN IN SEVERE ASYMPTOMATIC AORTIC STENOSIS

ACC Poster Contributions
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Background: Global longitudinal peak systolic strain (GLPSS) derived by speckle tracking echocardiography reflects early LV dysfunction. We have recently shown that natriuretic peptides predict outcome in severe asymptomatic aortic stenosis (AS). However, the role of BNP and GLPSS in asymptomatic AS remains unclear.

Methods: 28 asymptomatic pts with severe AS (age 72±11 yrs, female 9 pts, mean gradient MG 67±22 mmHg, valve area AVA 0.67±0.16 cm^2) underwent echocardiography and speckle tracking 2D strain analysis (EchoPAC 7.0, GE). Plasma NT-proBNP was determined by electro-chemiluminescence (Roche Elecsys).

Results: Median NT-proBNP was 707 (IQR 252 to 1522) pg/ml. Mean GLPSS was reduced to -15.4±3.5% (-9.5 to -21.8). GLPSS was significantly related to NT-proBNP (r=-0.62, p=0.0004). GLPSS was not related to MG, AVA, degree of LV hypertrophy or ejection fraction (mean 63±8%), although particularly low GLPSS (-9.8, 10%) was observed in pts with borderline EF. Importantly, pts remaining asymptomatic during follow up had significantly lower baseline NT-proBNP levels and higher GLPSS compared to 7 pts referred for valve replacement within 6 months (NT-proBNP 326 [IQR 238-763] vs 1658 [1004- 1929] pg/ml, p=0.002; GLPSS -16.5±3.2 vs -13.3±3.7%, p=0.04).

Conclusions: Pts with elevated NT-proBNP also present with reduced longitudinal strain despite preserved LV function. Both NT-proBNP and speckle tracking derived systolic strain could help identify patients which benefit from early surgery.